

What is claimed is:

1. A lamp assembly comprising:

a base having a top and side walls forming a cavity with an interior surface;
a glass lamp having at least one end with an exterior surface inserted in the base
cavity; and

a foamable coupling positioned between the interior surface of base and the exterior surface of the glass lamp, said coupling comprising a copolymer wherein the copolymer is selected from the group consisting of ethylene vinyl acetate, ethylene methyl acrylate, ethylene butyl acrylate, ethylene ethyl acrylate, ethylene methacrylic acid, and mixtures thereof and a blowing agent;

wherein when the base and glass lamp are heated, the foamable coupling expands and securely affixes the glass lamp in the base.

2. The lamp assembly of Claim 1 wherein the coupling further comprises a chemical crosslinking agent and a radiation crosslinking promoter.

3. The lamp assembly of Claim 2 wherein the coupling further comprises at least one tackifier, antioxidant, filler or a combination thereof.

4. The lamp assembly of Claim 3 wherein the coupling comprises:

from about 60 to 80 percent by weight of at least one copolymer wherein the copolymer is selected from the group consisting of ethylene vinyl acetate, ethylene methyl acrylate, ethylene butyl acrylate, ethylene ethyl acrylate, ethylene methacrylic acid, and mixtures thereof;

from about 2 to 7 percent by weight of at least one chemical blowing agent;

from about 3 to 15 percent by weight of at least one tackifier;

from about 1 to 7 percent by weight of at least one peroxide;

from about 0.5 to 5 percent by weight of at least one antioxidant;

from about 1 to 4 percent by weight of at least one radiation crosslinking promoter; and

from about 0 to 20 percent by weight of at least one filler.

5. The lamp assembly of Claim ²1 wherein the base and the glass lamp are heated to a temperature from 130-200°C.
6. The lamp assembly of Claim ²1 wherein the base and glass lamp are heated to a temperature from 150-180°C.
7. The lamp assembly of Claim ²1 wherein the base and glass lamp are heated to a temperature of 165°C.
8. The lamp assembly of Claim ²1 wherein the blowing agent is a microencapsulated blowing agent present in an amount from 1 to 10 percent by weight.
9. The lamp assembly of Claim 8 wherein the base and glass lamp are heated to a temperature from 130-200°C.
10. The lamp assembly of Claim 8 wherein the base is heated to a temperature of from about 150-190°C.
11. The lamp assembly of Claim 8 wherein the base is heated to a temperature of 160°C.
12. The lamp assembly of Claim 1 wherein the foamable coupling is ring-shaped, C-shaped, square-shaped, or rectangular-shaped.
13. The lamp assembly of Claim 1 wherein when the base and glass lamp are heated the foamable coupling expands primarily in the radial direction.
- ¹⁴12. A method of forming a lamp assembly from a light emitting glass lamp having at least one end and a base having a top and side walls forming a cavity, the method comprising:

placing a foamable coupling inside the base, said coupling comprising:

at least one copolymer wherein the copolymer is selected from the group consisting of ethylene vinyl acetate, ethylene methyl acrylate, ethylene butyl acrylate, ethylene ethyl acrylate, ethylene methacrylic acid, and mixtures thereof and at least one blowing agent;

inserting the end of the glass lamp into the base; and

expanding the coupling to securely affix the glass lamp in the base.

¹³ 13. A method of forming a lamp assembly from a light emitting glass lamp having at least one end and a base having an opening, the method comprising:

placing a foamable coupling around the end of the glass lamp, said coupling comprising:

at least one copolymer wherein the copolymer is selected from the group consisting of ethylene vinyl acetate, ethylene methyl acrylate, ethylene butyl acrylate, ethylene ethyl acrylate, ethylene methacrylic acid, and mixtures thereof and at least one blowing agent;

inserting the end of the glass lamp into the base opening; and

expanding the coupling to securely affix the glass lamp in the base.

¹⁴ 14. The method of Claim 12 wherein the coupling further comprises a chemical crosslinking agent and a radiation crosslinking promoter.

¹⁵ 15. The method of Claim 13 wherein the coupling further comprises a chemical crosslinking agent and a radiation crosslinking promoter.

¹⁶ 16. The method of Claim 14 wherein the coupling further comprises at least one tackifier, antioxidant, filler or a combination thereof.

¹⁷ 17. The method of Claim 15 wherein the coupling further comprises at least one tackifier, antioxidant, filler or a combination thereof.

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~~18~~. The method of Claim 12 wherein the blowing agent is a microencapsulated blowing agent.

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~~19~~. The method of Claim 13 wherein the blowing agent is a microencapsulated blowing agent.

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~~20~~. The method of Claim 18 wherein the microencapsulated blowing agent is present in an amount from 1 to 10 percent by weight.

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~~21~~. The method of Claim 19 wherein the microencapsulated blowing agent is present in an amount from 1 to 10 percent by weight.

²⁴
~~22~~. The method of Claim of 12 wherein expanding the coupling is carried out at a temperature from 130 to 200°C.

²⁵
~~23~~. The method of Claim of 13 wherein expanding the coupling is carried out at a temperature from 130 to 200°C.

²⁶
~~24~~. The method of Claim 12 wherein expanding the coupling is carried out at a temperature from 150 to 190°C.

²⁷
~~25~~. The method of Claim 13 wherein expanding the coupling is carried out at a temperature from 150 to 190°C.

²⁸
~~26~~. The method of Claim 12 wherein expanding the coupling is carried out at a temperature of 160 to 165°C.

²⁹
~~27~~. The method of Claim 13 wherein expanding the coupling is carried out at a temperature of 160 to 165°C.

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~~28~~. The method of Claim 12 wherein the coupling further comprises:

from about 60 to 80 percent by weight of at least one copolymer wherein the copolymer is selected from the group consisting of ethylene vinyl acetate, ethylene methyl acrylate, ethylene butyl acrylate, ethylene ethyl acrylate, ethylene methacrylic acid, and mixtures thereof;

from about 2 to 7 percent by weight of a chemical blowing agent;

from about 3 to 15 percent by weight of at least one tackifier;

from about 1 to 7 percent by weight of at least one peroxide;

from about 0.5 to 5 percent by weight of at least one antioxidant;

from about 1 to 4 percent by weight of at least one radiation crosslinking promoter; and

from about 0 to 20 percent by weight of at least one filler.

³¹
~~29.~~

The method of Claim 13 wherein the coupling further comprises:

from about 60 to 80 percent by weight of at least one copolymer wherein the copolymer is selected from the group consisting of ethylene vinyl acetate, ethylene methyl acrylate, ethylene butyl acrylate, ethylene ethyl acrylate, ethylene methacrylic acid, and mixtures thereof;

from about 2 to 7 percent by weight of a chemical blowing agent;

from about 3 to 15 percent by weight of at least one tackifier;

from about 1 to 7 percent by weight of at least one peroxide;

from about 0.5 to 5 percent by weight of at least one antioxidant;

from about 1 to 4 percent by weight of at least one radiation crosslinking promoter; and

from about 0 to 20 percent by weight of at least one filler.

³²
~~30.~~

A non-pressure sensitive adhesive foamable composition comprising:

from about 50 to 80 percent by weight of at least one copolymer wherein the copolymer is selected from the group consisting of ethylene vinyl acetate, ethylene methyl acrylate, ethylene butyl acrylate, ethylene ethyl acrylate, ethylene methacrylic acid, and mixtures thereof;

from about 1 to 10 percent by weight of a microencapsulated blowing agent;

from about 0 to 30 percent by weight of at least one tackifier;
from about 0.5 to 5 percent by weight of at least one peroxide;
from about 0 to 5 percent by weight of at least one chemical blowing agent;
from about 1 to 10 percent by weight of a blowing agent activator;
from about 0.25 to 5 percent by weight of at least one antioxidant;
from about 0.5 to 5 percent by weight of at least one radiation crosslinking
promoter; and
from about 0 to 30 percent by weight of at least one filler.

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~~31.~~ The composition of Claim 30 wherein the tackifier is a polyamide based resin.

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~~32.~~ The method of Claim 12 wherein the coupling comprises the composition of
Claim 30.

³⁵
~~33.~~ The method of Claim 13 wherein the coupling comprises the composition of
Claim 30.

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~~34.~~ The lamp assembly of Claim 1 wherein the coupling comprises the
composition of Claim ³²~~30~~.

³⁷
~~34.~~ A coupling for securely affixing one end of a light emitting glass lamp in a
base, said coupling comprising the foamable composition of Claim ³²~~30~~.